- when it has to be **right**

Leica Geosystems

Leica Captivate v4.50
Software Release Notes

Product	Leica Captivate Field Controllers: CS20, CS35 Total Stations: TS16, TS60, MS60, TS13, TS10 GNSS Sensors: GS18 T
Release date	17th June 2019
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Available in myWorld	Week 25, 2019

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1 Leica Captivate v4.50 Release Notes - Introduction

Please do take your time to read these Release Notes. They contain information about new features and bugfixes

General information

There is a Leica Captivate v4.50 release for the following hardware

- Field Controllers: CS20, CS35
- Total Stations: TS10, TS13, TS16, TS60, MS60
- GNSS Sensors: GS18 T

Customer Care Product (CCP) dates

The Leica Captivate software version 4.50 can be loaded onto all CS Field Controllers, GS18T GNSS Sensors and TS Total Stations with a CCP license valid until at least 01.05.2019

Jobs, Coordinate Systems, Working Styles, RTK Profiles and other objects

All Leica Captivate "objects" (such as Jobs, Coordinate Systems, Working Styles, RTK profiles etc.) created or used within previous Leica Captivate versions can be used without problems in Leica Captivate v4.50

Compatibility between Leica Captivate versions

Compatibility between Leica Captivate versions is guaranteed if the instruments run the same major version.

This means, for example, when using a version 2.x on a Leica Captivate GS Sensor or TS Total Station, the CS20 or CS35 Controller must also run a v2.x to be compatible.

For the new Leica Captivate v4.50, all Leica Captivate GS Sensors and TS Total Stations must be upgraded to a version 4.x to be compatible with a CS20 or CS35 Controller running v4.50 and vice versa.

Compatibility between Leica Captivate and SmartWorx Viva versions

The table below shows the compatibility between Leica Captivate and SmartWorx Viva versions

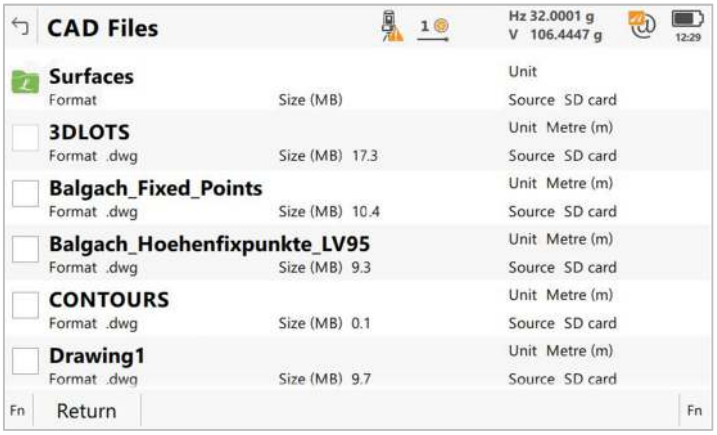
		CS20, CS35			
		Leica Captivate v1.x	Leica Captivate v2.x	Leica Captivate v3.x	Leica Captivate v4.x
TS MS GS	All versions prior to SmartWorx Viva v6.0 and higher than v5.60	Fully compatible	Not compatible	Not compatible	Not compatible
	SmartWorx Viva v6.x	Not compatible	Fully compatible	Not compatible	Not compatible
	SmartWorx Viva v7.x	Not compatible	Not compatible	Fully compatible	Not compatible
	SmartWorx Viva v8.x	Not compatible	Not compatible	Not compatible	Fully compatible

Leica Captivate Software Improvements – New Features

Allow attaching DWG files to a job

With previous Leica Captivate versions it was possible to attach CAD files in the form of a DXF file. However, some data is handed to Leica Captivate users in form of a DWG file, which could then not be used directly.

With Leica Captivate v4.50 it is now possible to attach DWG files directly to a job.



Once the DWG file is attached to the job, the contained data can be viewed and imported in the same way as data from a DXF file.

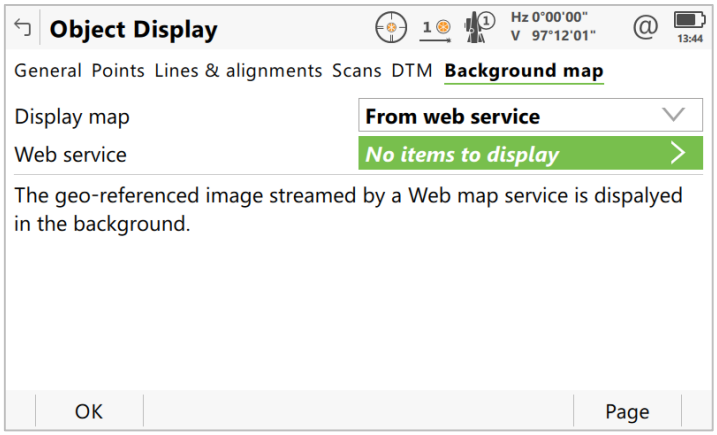
This extension to the CAD file handling allows a quicker workflow when using CAD files in DWG format as they can be used directly in Leica Captivate.

Support of WMS/WMTS streamed background images

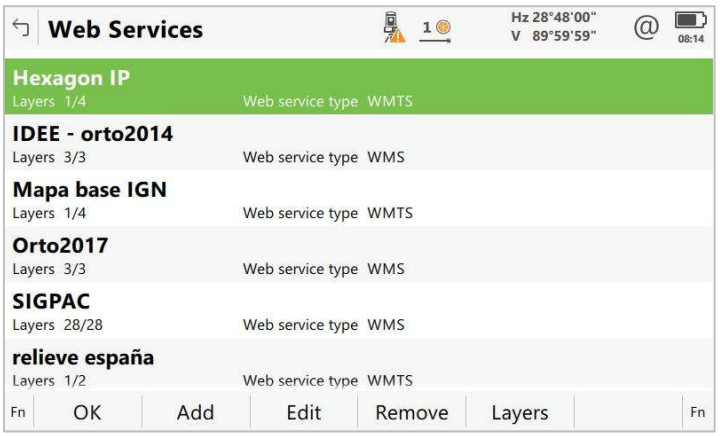
With Leica Captivate v4.50 WMS/WMTS streamed background images are supported. Previously the background images had to be obtained via Infinity and then loaded into Leica Captivate. It is now possible to connect to a WMS or WMTS server directly from Leica Captivate.

Note: there is an online course for this feature in our online learning platform, which you can access if you have a valid CCP maintenance license: https://learning.leica-geosystems.com/course/view.php?id=204

The WMS/WMTS connection can be configured in the 3D viewer **Display** settings, where the **Background images** tab was already available in former versions. When selecting to **Display map: From web service**, the **Web service** list box is displayed.

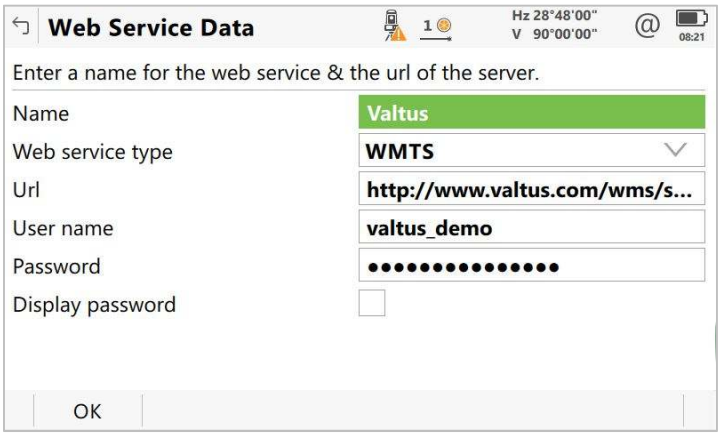


When accessing the **Web service** list box, any previously configured services are displayed.

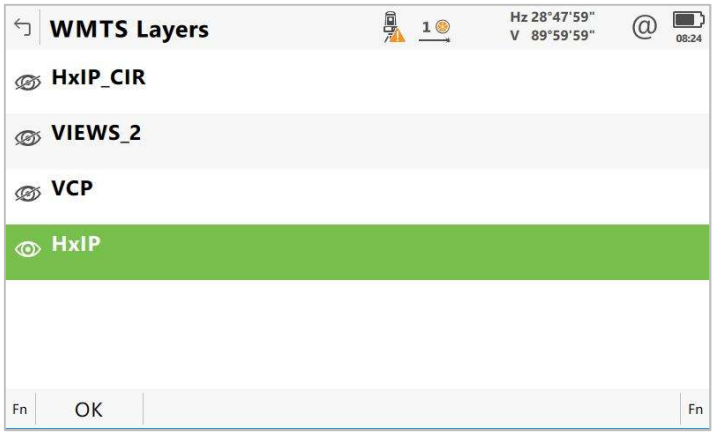


One of the services can now be selected by highlighting it and pressing **F1(OK).**

A new connection to a WMS or WMTS service can be configured via **F2(Add).**

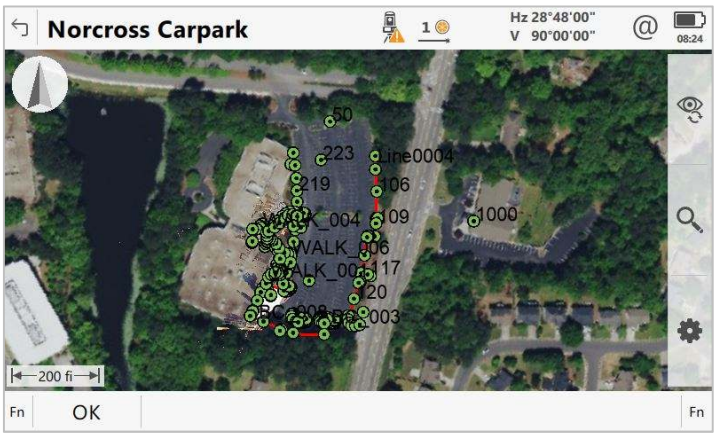


Once all settings are entered, the available layers are shown, and the visibility of each layer can be defined. The screenshot below shows only one of the layers as visible since this is a WMTS service which allows only one layer to be visible at a time.



Once a service is activated, the background images are downloaded from the

server as needed for the visible area and displayed. The background images get updated as the content of the 3D viewer changes.



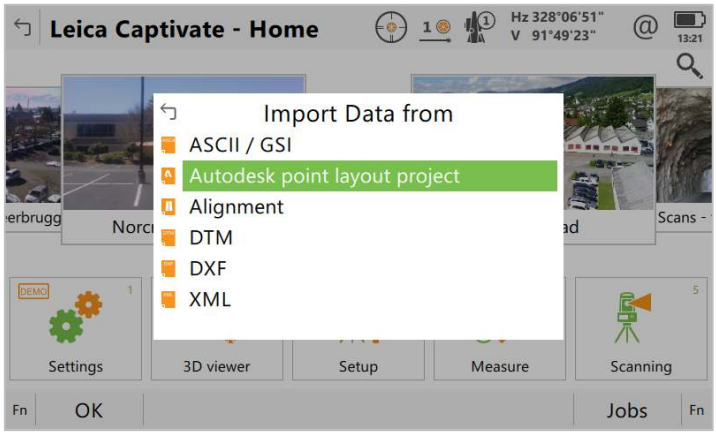
Note that this feature will only work properly, when the correct coordinate system is configured in the job. Otherwise the background data will not match the data in the job and will not be displayed.

Using background images can help significantly when navigating on a job site. Being able to directly download them from the server can save time and allows for much more flexible working in the field.

Easier importing of Autodesk design data

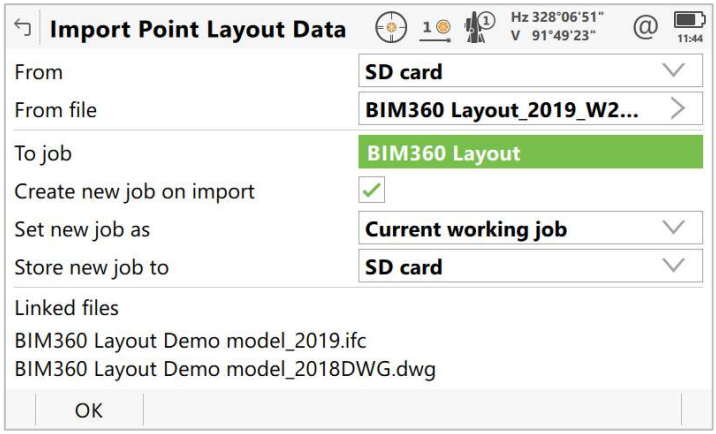
From June 2019 onwards, the Autodesk platform will allow exporting so-called “Leica Field Projects” to be easily imported directly into Leica Captivate. These projects will be in the form of a zipped file, containing an XML file with a list of control points and a design file (DWG, DXF or IFC) created in Autodesk, from which these control points were derived.

Leica Captivate v4.50 offers the option to select one of these field projects and add it to a job.



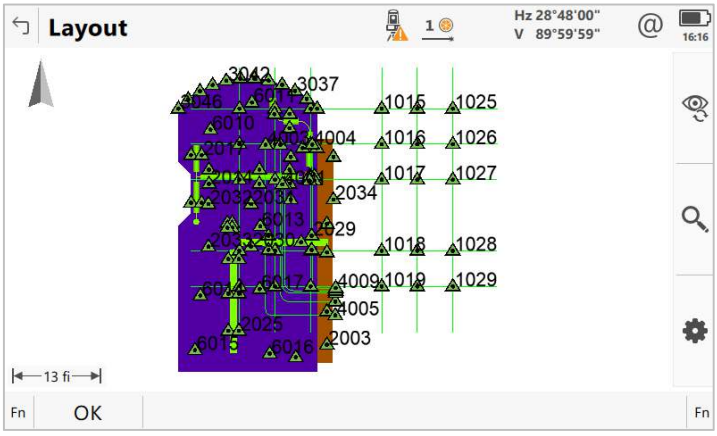
In the **Import Point Layout Data** panel, the zip file to import can be selected. When importing to an existing job, the job can be selected. When creating a new job, the job name can be defined.

Below the input fields, the files contained in the selected zip file are displayed.



Pressing **F1(OK)** will import the points contained in the XML file into the job and attach the design data file to the job.

The new Autodesk point layout project file needs to be placed into the **Data** folder on the SD card, internal memory or a USB device to make it available in Leica Captivate. The content of the file can be imported/attached to an existing job. It is also possible to create a new job on importing these files. When creating a new job, it will be possible to set this new job as the active working job or directly define it as the control or linked job.



This new feature allows importing/attaching stakeout and design data from Autodesk directly into Leica Captivate. It makes importing of design data from Autodesk into Leica Captivate much faster and easier and less prone to error.

BIM 360 docs connectivity

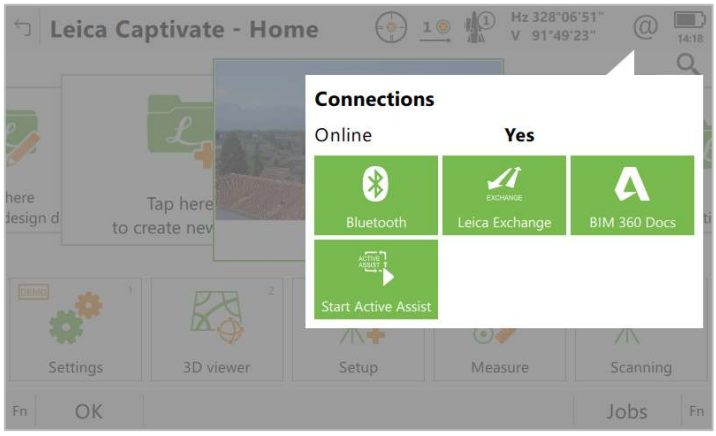
As a part of Autodesk's construction management software BIM 360, BIM 360 docs allows sharing construction & design documentation in real time throughout the different teams involved in a project. From Leica Captivate v4.50 onwards it will be possible to connect directly to the BIM 360 docs service to easily up- or download documents.

A BIM360 docs license is needed in Leica Captivate.

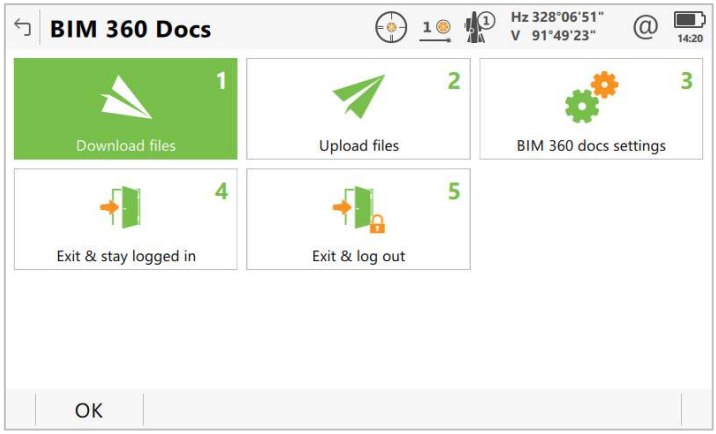
To start using BIM 360 docs within Leica Captivate, an authentication on the BIM360 server using the Autodesk credentials is needed. It is also necessary to authorize BIM 360 to have access to Leica Captivate.

Tapping the **@** icon in the Leica Captivate status bar and selecting **BIM 360 docs** will automatically open a web browser window which leads through the

authentication and authorization process.

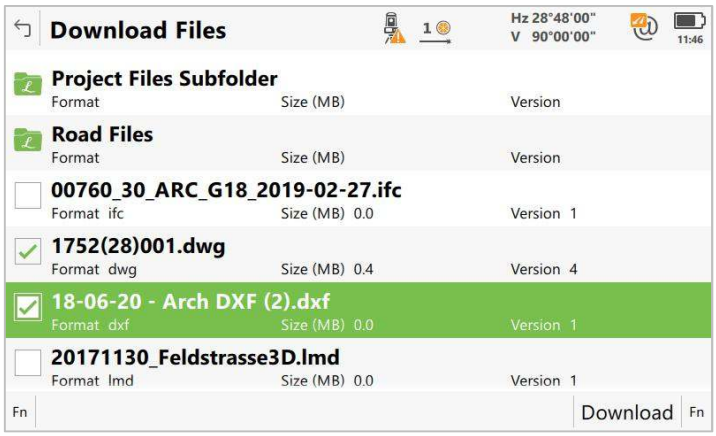


Once the authentication and authorization process is successfully completed, the main panel of **BIM 360 Docs** is displayed in Leica Captivate.

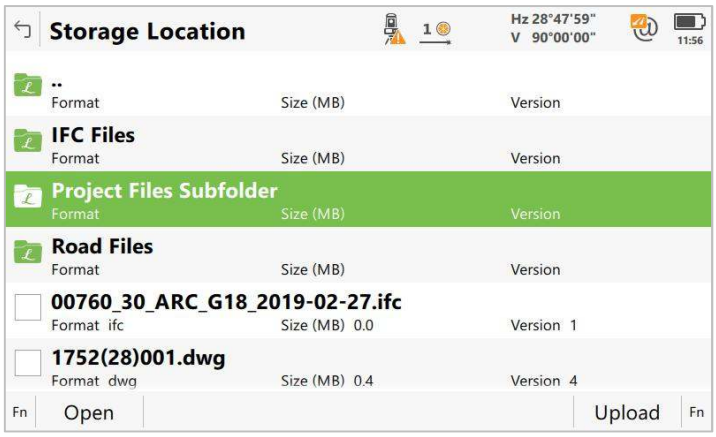


From the **BIM 360 Docs** menu, it is possible to open the download or upload panel which allows sending or receiving files to or from authorized BIM 360 projects.

In the **Download Files** panel, a list of all files available for download via the BIM 360 service are shown. Once the needed files are selected, **F6(Download)** starts the downloaded of the files and stores them in the memory device specified in the Leica Captivate BIM 360 application settings.

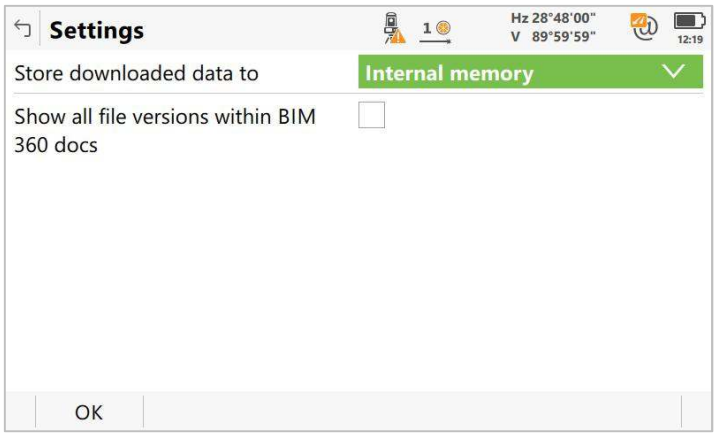


When uploading files from Leica Captivate to the BIM 360 service, it is possible to select the files from any file location within the **Data** folders of the internal memory, SD card or USB stick. Once the files are selected, the BIM 360 folder to store the data to, needs to be chosen. Pressing **F6(Upload)** starts the upload to the selected file location.



BIM 360 docs allows handling multiple versions of the same file, creating a new version on the server each time the same file is uploaded to the same project location.

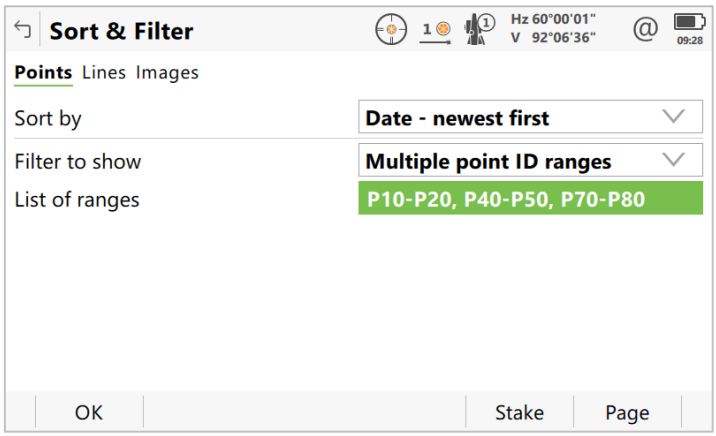
This file version is displayed in Leica Captivate when displaying the content on the BIM 360 server. Per default only the latest version of a file is shown when accessing the BIM 360 docs service. It is possible to define in the application settings that all available versions should be shown.



Using this new feature within Leica Captivate will save time and improve the dataflow especially when using Autodesk packages in the office, providing a quick way of sharing design files and documentation with the field crews and also in the opposite direction, where the Leica Captivate user can immediately share with other project participants the results of the as-built measurements.

Extended multiple point ID range filter

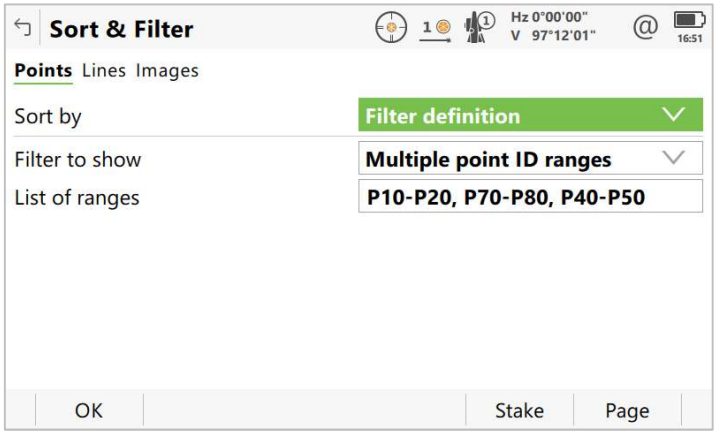
With Leica Captivate v3.0 we had introduced the **Multiple point ID ranges** filter in Leica Captivate. This functionality allows defining ranges of point IDs for points that should be available in an application. It can be very useful, for instance when defining stakeout lists.

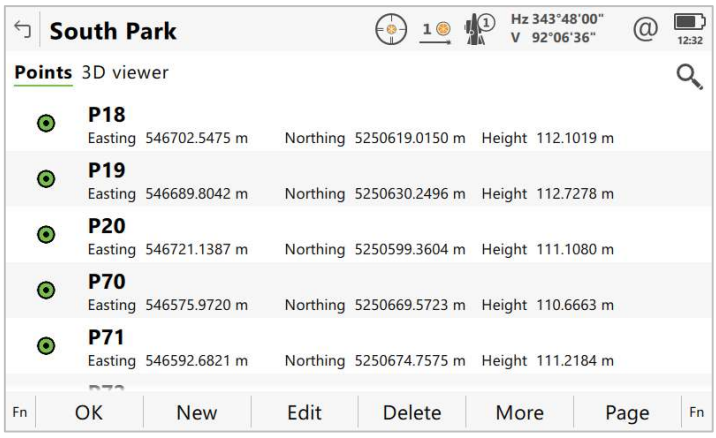


With Leica Captivate v4.50 we have extended this filter so that it now allows defining the order in which the points should be shown in the filtered point list. (Note that in v4.50 this feature works for points in the working job only.)

For example, if the filter is defined to show points 10-20 and next points 70-80 and then points 40-50, with previous Leica Captivate versions, the points would always be displayed sorted ascending or descending by point ID or date.

Now with a new **Sort by** option called **Filter definition**, the point ID order defined in the filter, also determines the order in which the points are shown in the point list.



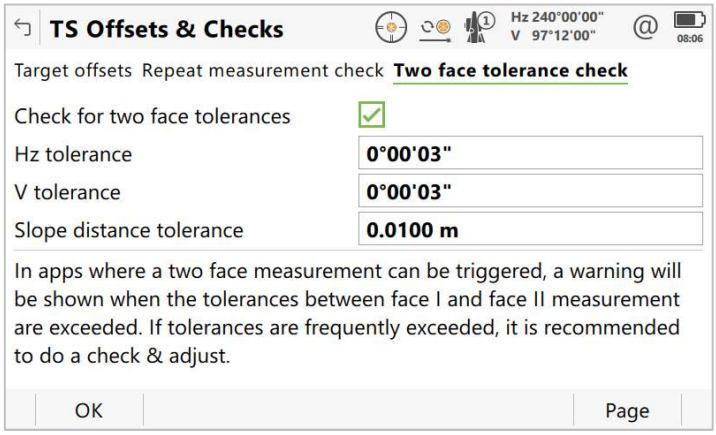


This allows for an easy way to define the order of stakeout tasks for a field crew to optimize their workload.

Tolerance check for 2 face measurements

While in previous Leica Captivate versions the difference in Hz and V angle and in slope distance could be viewed for 2 face measurements, there was never a specific tolerance check that automatically compared both measurements.

With Leica Captivate v4.50 a **Two face measurement check** has been introduced which allows setting the maximum tolerance value for the difference in horizontal and vertical angle and slope distance between face 1 and face 2 measurements.



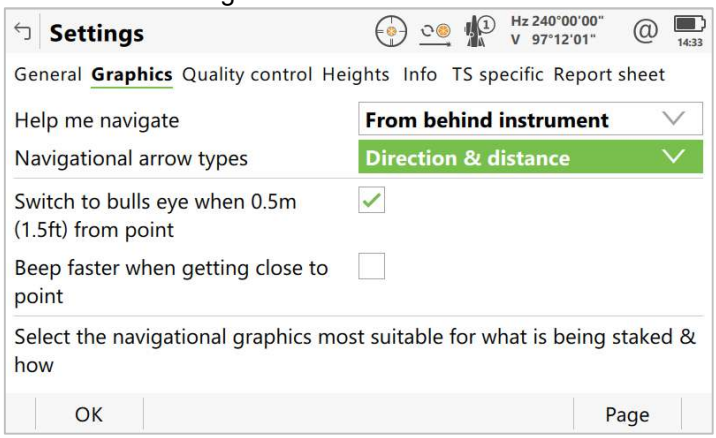
This new setting can be found **Settings->Point storage->TS offsets & checks.** There is a new **Two face tolerance check** page tab and the new **Check for two face tolerances** setting will be activated as soon as the Total Station is upgraded to v4.50.

Note that this new tolerance check has no influence on the tolerance check that had already been done in the **Traverse** and **Measure sets** apps in previous Leica Captivate versions.

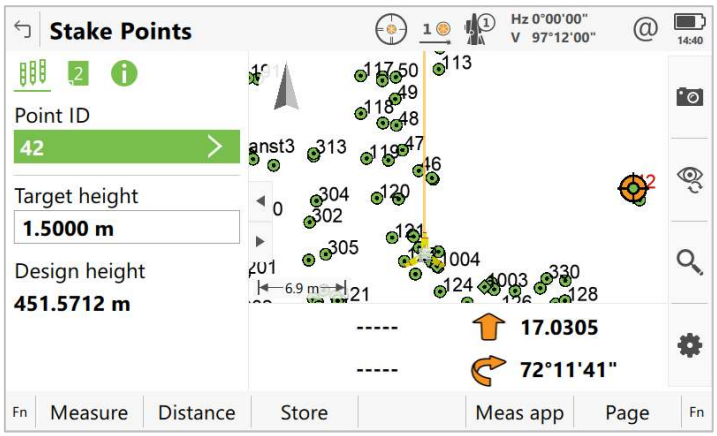
Show distance and direction to point to stake without triggering a measurement

When working in the **Stake points** or **Stake pts & DTM** app, it is always necessary to measure a distance to get the navigation values for staking a point. This is necessary for most stakeout setups, but not when working with navigation directions from directly behind the instrument.

With Leica Captivate v4.50 the displaying of the stakeout navigation values has been changed. From this version onwards, when navigating with **Direction & distance** and **From behind instrument**, the navigation values are shown without the need of measuring a distance first.



When the **Stake points** app is accessed or when a new point to stake out is selected, the distance and direction values are shown.



The height values are only shown once a measurement was triggered.

This can speed up the stakeout process, especially when working with manual Total Stations.

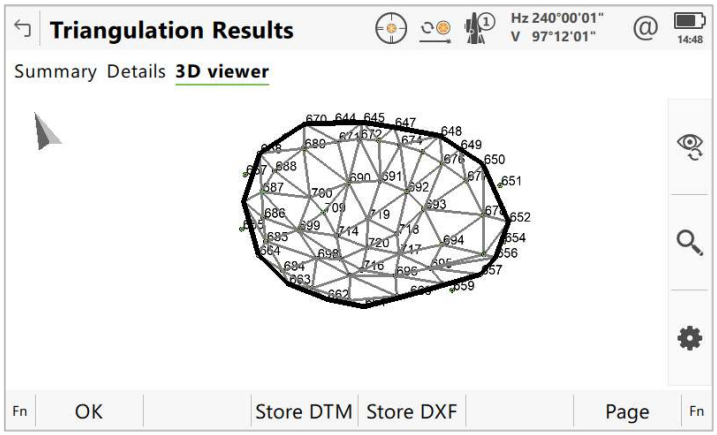
Surface to Surface calculation

In previous versions of Leica Captivate, the **Volume** calculation app could be used to define a surface and then use different volume calculation methods:

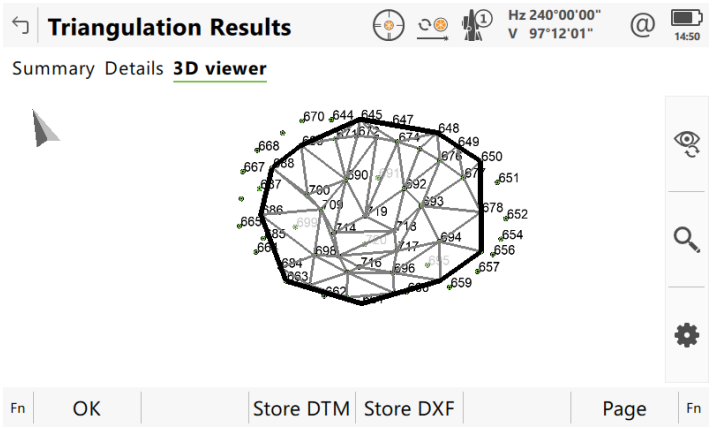
- Stockpile (which allows the calculation of the volume between the triangulated surface and the DTM surface defined by the selected boundary points)
- Surface to an entered height
- Surface to height of a selected point

With Leica Captivate v4.50 a fourth method is added, which allows calculating the volume between two user defined surfaces.

For this new method, instead of calculating only one surface, it is necessary to calculate a second surface to compare to.



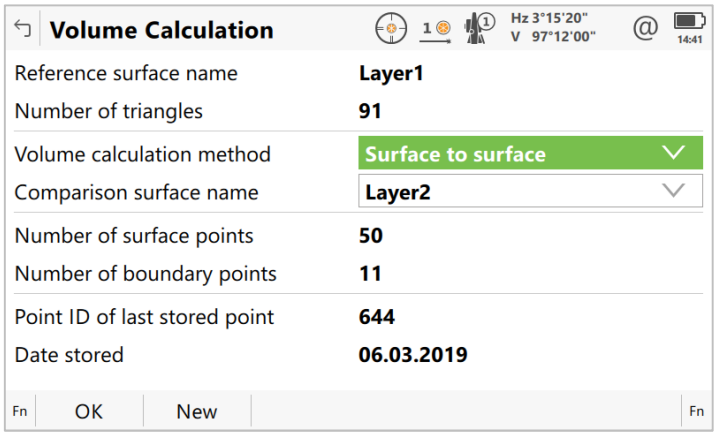
Boundary Surface 1



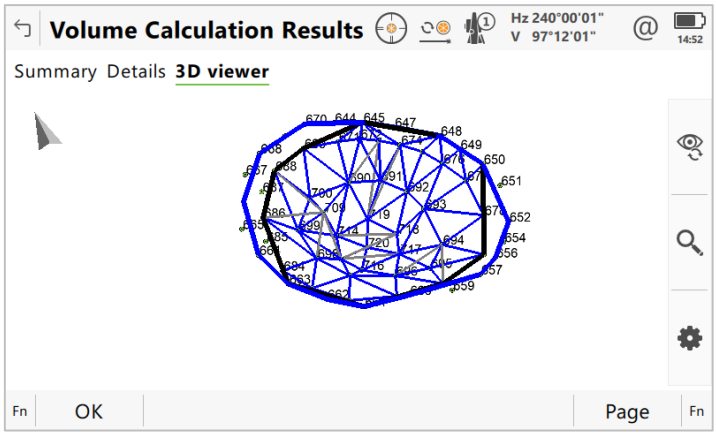
Boundary Surface 2

Afterwards, when selecting the **Volume calculation method: Surface to surface**, the current surface is selected as the **Reference surface** and the **Comparison surface** can be selected.

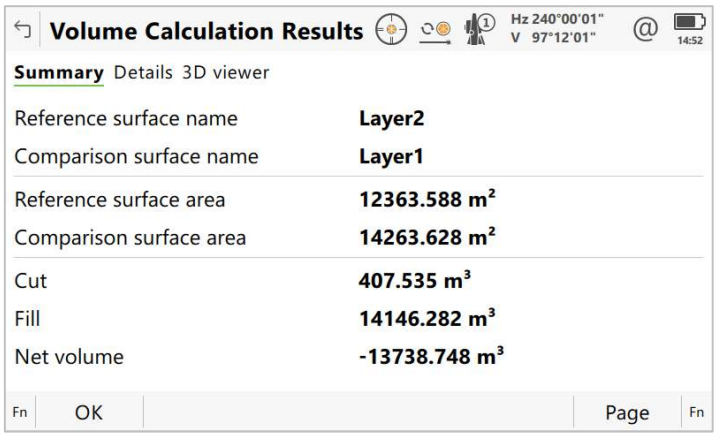
It is also possible to create a new surface to compare to. When **Volume calculation method: Surface to surface** is used, the **F2(New)** button allows creating an additional surface.



The **Volume Calculation Results** page then allows viewing the used surfaces in the 3D viewer. Results are calculated for the area in which both surfaces overlap.



It also shows the reference surface area size for both surfaces and the **Cut** and **Fill**. The difference in volume between both surfaces is shown as the **Net volume**.



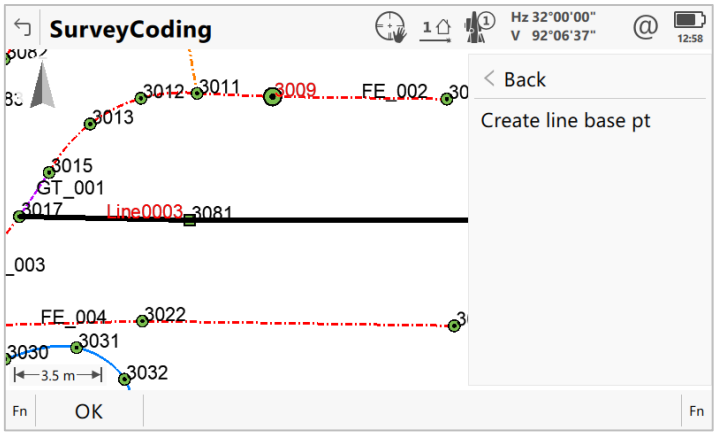
When pressing **F1(OK)** in the **Volume Calculation Results** page, the calculated volume is stored in the currently active working job.

This new feature allows to easily monitor changing volumes of stockpiles or excavations while they are in use.

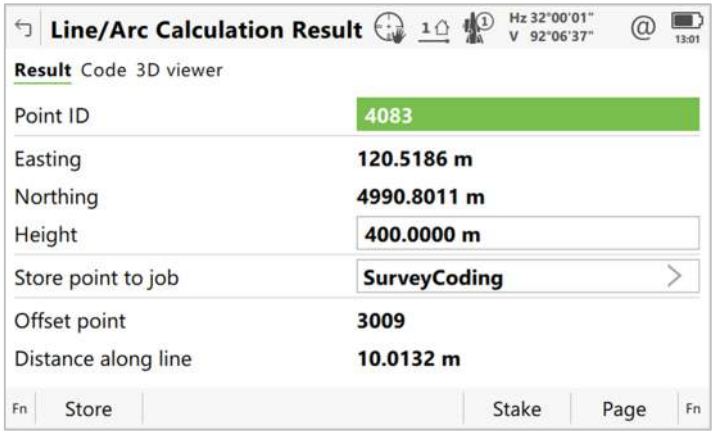
Calculate a base point on a line

In some surveys it may be useful to be able to calculate and stake the base point of a point projected perpendicularly onto a line.

Leica Captivate v4.50 now offers the option to select a point and a line from the 3D Viewer and select from the context menu the option to **Create line base pt**.

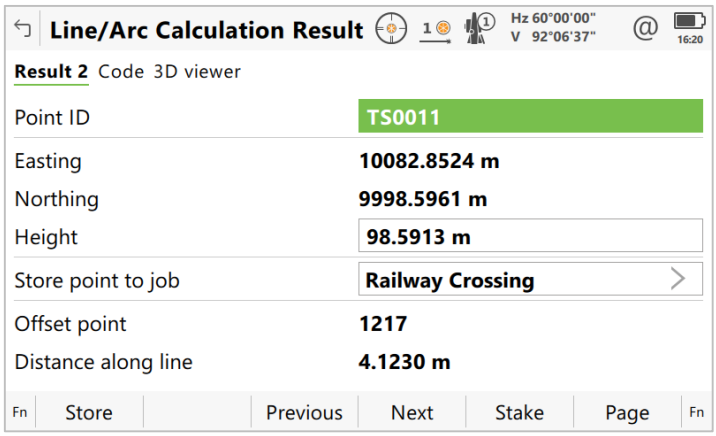


This will calculate the perpendicular projection of the point onto the selected line.

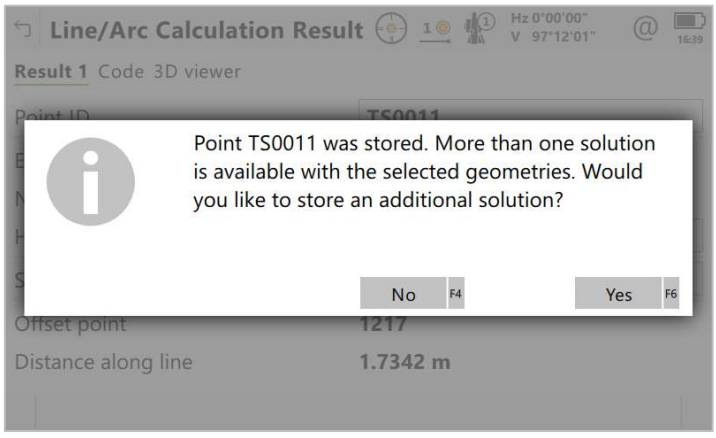


The results page shows the coordinates of the calculated base point and allows changing the Point ID, Height, Code and select the job the new point is stored to.

If more than one result was calculated for the selected geometry, the results page allows toggling through the results using the **F4(Next)** and **F3(Previous)** buttons.



Once the selected result is stored, a message box allows defining if another result should be stored or not.



Note that this feature only works for lines that do not contain best fit arcs or splines. Only lines with one segment will be “extended” to calculate a base point outside the actual line. The extension will not happen for lines with more than one segment.

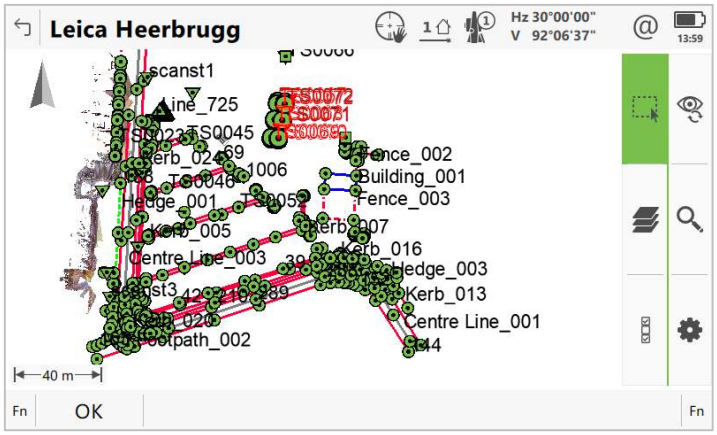
This new feature can be useful, when a base point needs to be calculated directly in the field, for instance when extending a line perpendicular to another line.

Graphical filter for points

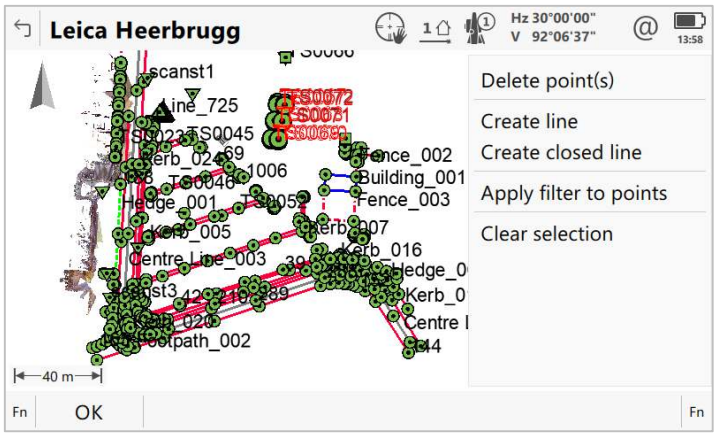
When filtering points in a job, it is sometimes easier to select the needed points from a graphical filter in the 3D viewer rather than by point ID.

With Leica Captivate v4.50 the 3D viewer context menu now offers the option to filter points by graphically selecting the points from the map view.

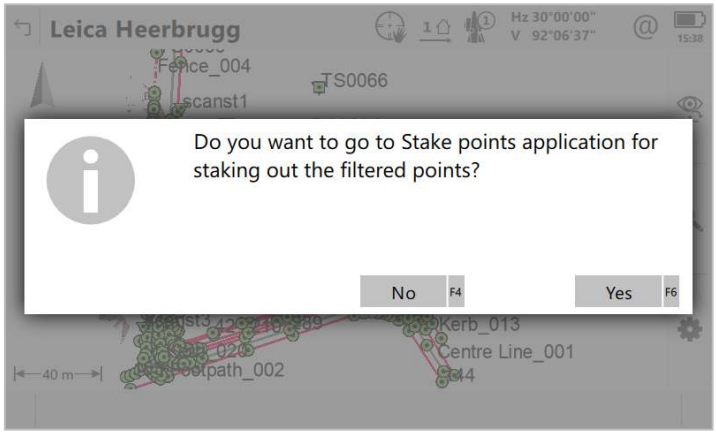
Use the window selection tool to select several points or select multiple points separately.



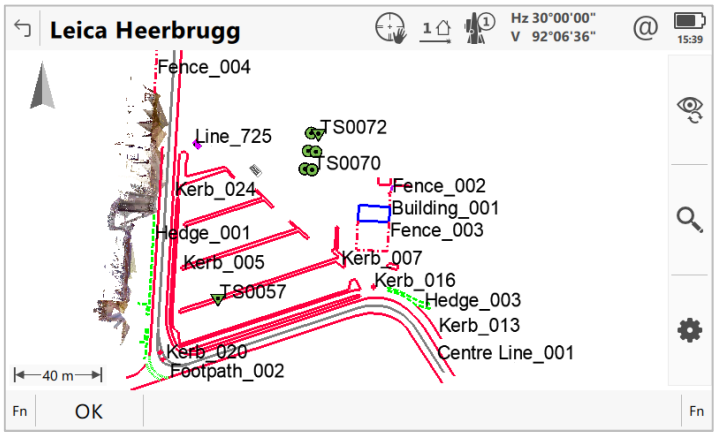
Then open the context menu and select to **Apply filter to points**.



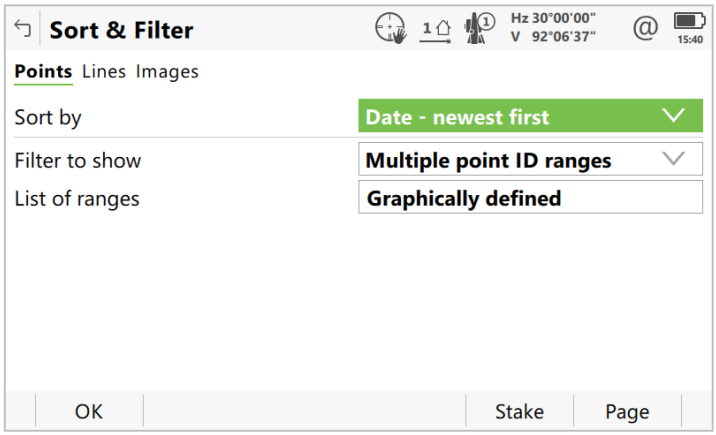
A multiple point range filter is now applied, and a message is shown allowing to directly open the Stake points app to stake out the filtered points.



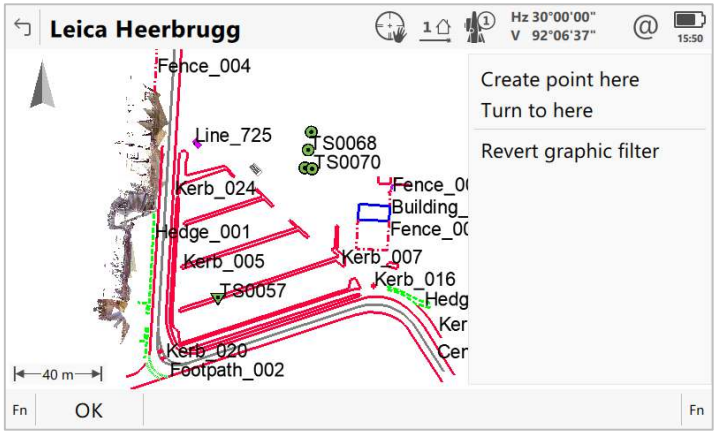
The **3D viewer** content is now reduced to only showing the filtered points.



When viewing the filter settings in the data management, it indicates that the filter was applied by graphically selecting the points.



Since the graphical filter overwrites the previously applied filter settings for the job, an option to **Revert graphic filter** is available in the **3D Viewer** context menu after applying the graphical filter. This will remove the graphical filter and restore the filter settings that had previously been applied.



Note: If the 3D viewer is displaying a mixture of points from a working job and linked or control jobs, a message will be shown, allowing to choose which points to apply the filter to.

The new tool is available in the following instances in Leica Captivate:

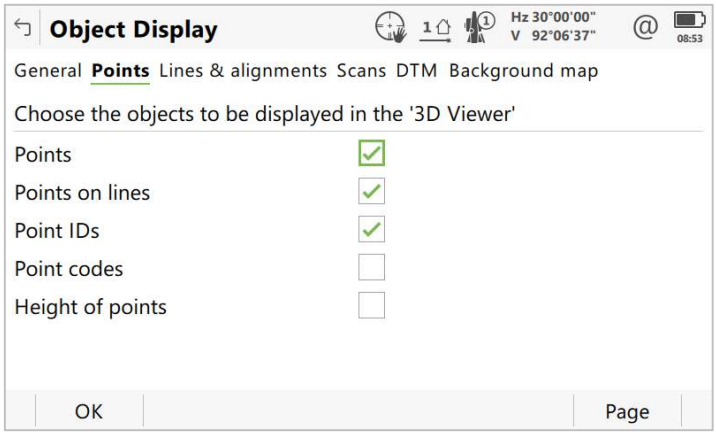
- The **3DViewe**r app.
- The **Measure** app.
- In **View & edit data**.
- The **Dataset** panel.

This new feature allows to quickly and easily filter points by position without having to know the point IDs.

Display or hide points on lines

When using jobs containing a lot of points and lines, it can at times become necessary to filter what is shown in the 3D viewer.

For this purpose, Leica Captivate v4.50 now offers a new setting in the 3D viewer Object Display settings that allows turning on or off the displaying of points with a linework flag.



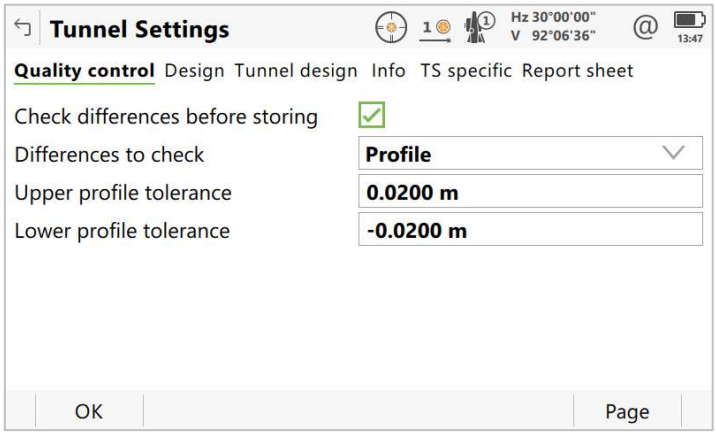
This can be useful if, for instance in the Stake points app, only the points without linework flag are needed to be shown.

Upper and lower profile limit in the Tunnel app

The Stake/Check Tunnel apps allow, among others, a QC setting which checks the difference between the measured position and the defined tunnel profile before storing. This setting until now allowed only one profile tolerance limit to be defined.

With Leica Captivate v4.50 an **Upper profile tolerance** and a **Lower profile**

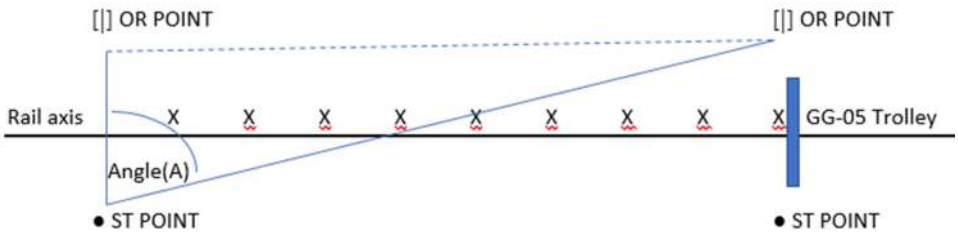
tolerance setting are available in the Tunnel app.



The new QC criteria now allow entering two separate values for the profile tolerance to better monitor the quality while working in the Tunnel app.

Chord setup extension for the Rail app

The Rail app has been extended with a so-called chord setup method, which is basically a free station that uses two orientation points on the opposite side of the rail track for orientation



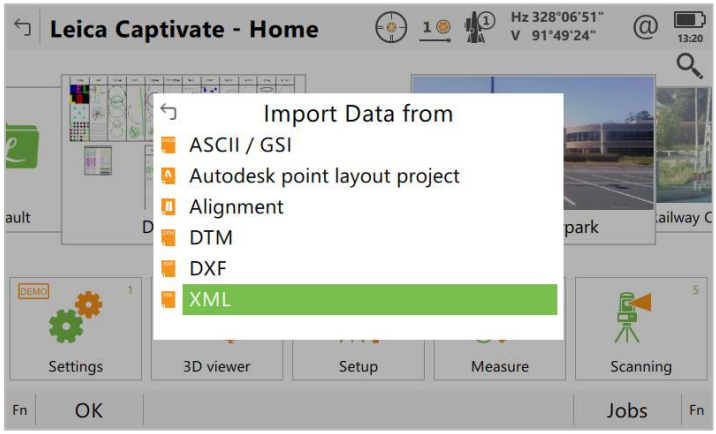
The Setup method will use the angle to both orientation (OR) points and the distance to the perpendicularly opposite OR point to calculate the setup point (ST) coordinates.

This new method can be particularly useful when setting up the instrument in rail projects where the design accuracy for the chainage is low (e.g. Centimeter or decimeter accuracy). The measured height will be corrected linearly from the first orientation point to the second, taking into account the height error during the setup.

Extension to the XML import for the Rail app

The XML import for the Rail app has been extended with two elements:

A table with gauge widening values can be defined in Hexagon XML to define the gauge widening value to apply to the nominal gauge. This is required in rail jobs for curves with small radius.

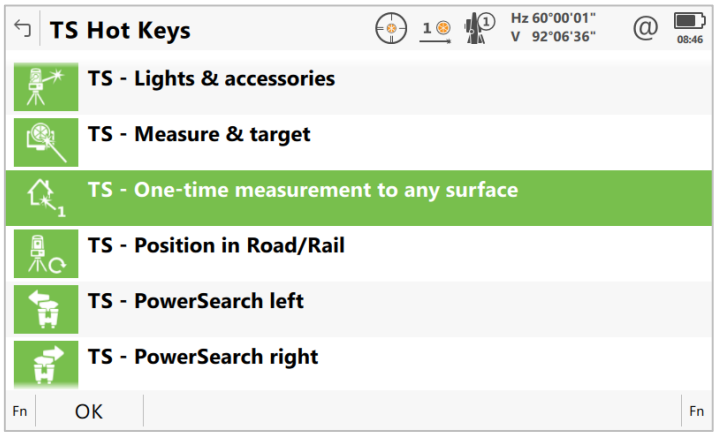


Cant elements from a LandXML file can now be imported directly in a Rail job using the **Import XML** functionality.

New Hotkey to trigger one-time measurement to any surface

Sometimes during a survey using a prism to measure points, it may be necessary to switch to a reflectorless measurement for just one point and to then continue measuring to a prism.

To make this more efficient, a new hotkey has been introduced with Leica Captivate v4.50 which allows switching to a one-time reflectorless measurement and to afterwards automatically switch back to measurements to a prism.



Once configured, the Hotkey will directly start a reflectorless measurement when used within the **Measure** or **Stake** apps.

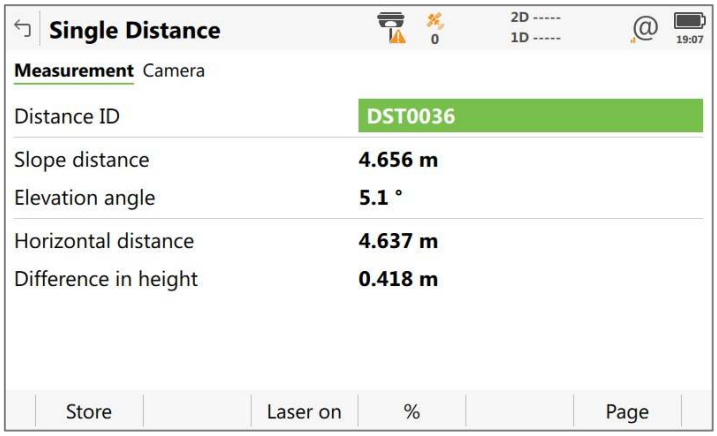
This new setting can also be configured as a **TS Favorite**. It can significantly speed up switching between measurements to a prism and reflectorless measurements.

Leica Captivate Software Improvements – Loadable Apps

New Disto app

Together with Leica Captivate v4.50, a Disto app is released.

The app allows measuring distances from the CS20 Controller's internal Disto sensor and provides survey methods to calculate specific results, such as height difference, slope distance, distance difference, distance summation and areas and volumes. All measurements and results are stored in the current job.



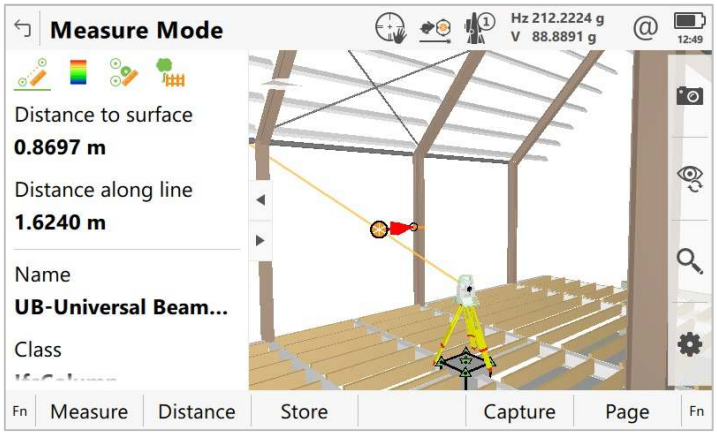
The app will use and store values from the internal Disto as well as the tilt sensor integrated into the CS20 Controller.

An export functionality is integrated directly in the app but it's also possible to export Disto data using the system's stylesheet export.

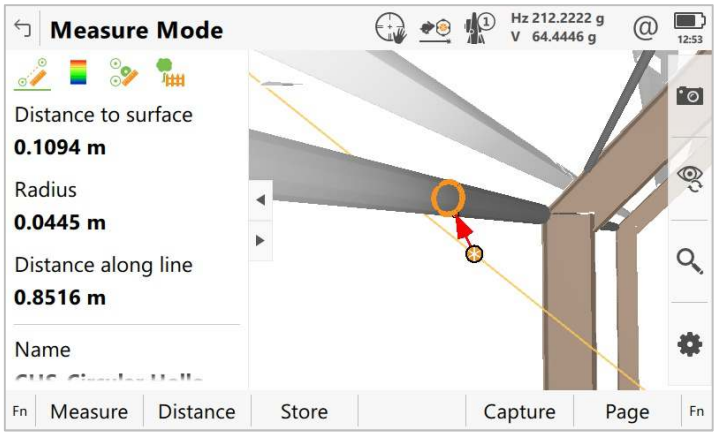
IFC files can now be used in the Inspect Surfaces app

Inspect Surfaces is a loadable app that allows comparing measurements to design surfaces.

The app has now been extended to allow using IFC data. The IFC elements can be used directly as references, allowing to verify the deviation between the measured points and the model.



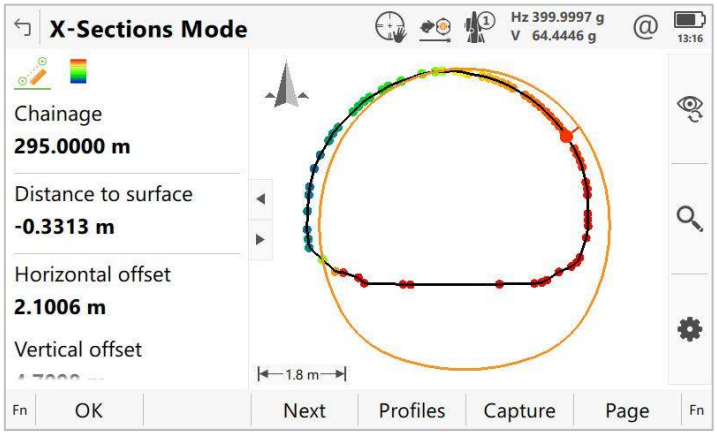
For IFC elements, such as column or beams with parameterized profile, Circle profile, Circle hollow profile, H Shape profile, etc., the application now also calculates the distance along the axis. The calculation is done against the known profile.



The ability to use IFC files in the Inspect Surface app directly in the field means the as-built structure can be easily checked against the design, finding errors early and possibly reducing the costs later on.

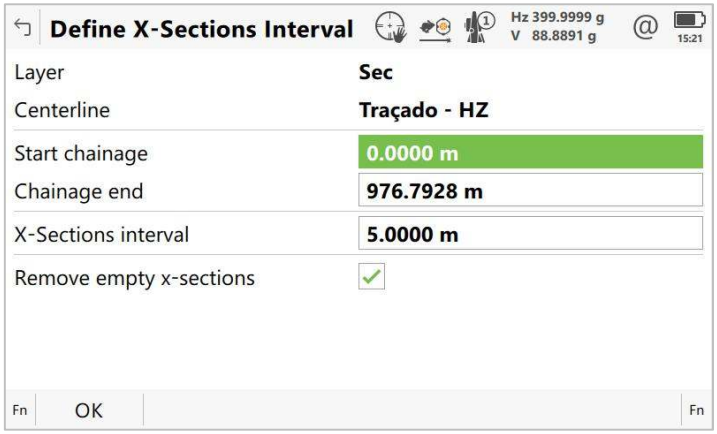
Adding cut models in the Inspect Surfaces app

The Inspect Surfaces app has further been extended to allow surfaces to be cut with planes, following a predefined direction and interval. This will create equally spaced cross-sections, which can then be viewed and analyzed.



The reference surfaces could be two measured surfaces or a measured surface and a design surface or IFC object.

The app allows defining the start and end chainage for the cross-sections as well as the interval at which they should be created.



This new feature allows comparing the created cross-sections from two reference surfaces directly in the field and detect deviations early.

2 Leica Captivate Software Improvements – Bug fixes

Wrong message shown when transferring jobs not created in Leica Captivate

With Leica Captivate v3.02 and higher it could happen that when transferring jobs between the SD card and the internal memory, a message would be shown stating that the job cannot be transferred because it is corrupt. Despite the message the job was transferred and could be used.

This would happen only with the second non-Captivate job transferred, transferring one job would work fine.

This issue is solved with Leica Captivate v4.50 and the message is not incorrectly shown anymore.

COGO Shift, Rotate & Scale - point codes not stored for newly calculated points

The **COGO** – **Shift, Rotate & Scale** Tool allows to configure that the newly calculated point use the Point IDs of he original points and that the original points are deleted when the new points are stored.

When this setting is activated, the codes that had been assigned to the original points would not be stored to the newly calculated points.

This issue is fixed with Leica Captivate v4.50 and codes are not taken over correctly.

Message not shown when DXF file contains too much data to display in the 3D viewer

When a DXF file contains too much data to display in the **3D viewer**, a message is shown once the limit is reached, informing the user that no more data can be loaded.

This limit check and displaying of the message did not work when a second DXF file was attached to a job after the first DXF file had already been displayed in the **3D viewer**.

This issue is fixed with Leica Captivate v4.50 and the message is shown correctly.

Performance improvement in Coding and Linework

When using Coding in the **Measure** app and creating Linework while storing the points, the performance of measuring and storing points would slow down significantly once more than 90 points were stored to the same line.

This issue has been fixed with Leica Captivate v4.50 and there is now no performance issue when many points are stored to the same line.

Hz value not shown in the Measure app, when the Hz angle display is set to South azimuth

In the **Regional Settings** panel it is possible to change the display of the **Hz angle display** to **South azimuth**.
With this setting when accessing the **Measure** app, the **Hz** angle field will not display a value.

This issue has been fixed with Leica Captivate v4.50.

Empty attributes not exported correctly when using free coding and ASCII

When using free coding, empty attributes should be exported as defined in the format file when using an ASCII export with format files.

With the previous Leica Captivate version this would not work unless the attribute

export with format files	was set into edit mode (without entering a value). The empty attributes would be exported with zeros or dashes. This issue is fixed with Leica Captivate v4.50 and the empty attribute values are correctly exported.
Empty attributes not exported correctly when using coding & linework	When using coding and linework, empty attributes should be exported without values. With the previous Leica Captivate version this would not work correctly. The empty attributes would be exported as dashes. This issue is fixed with Leica Captivate v4.50 and the empty attribute values are correctly exported.
Averaging method information not contained in XML file after export	When exporting a job containing averaged points to XML, the resulting XML file should contain the information, which averaging method had been used. With the previous Leica Captivate version, this information was missing from the XML file after exporting. With Leica Captivate v4.50 this issue is fixed, and the averaging method information is contained in the XML file.
Tunnel app - labels not properly exported into DXF file	When using the **Tunnel** app, a delta can be calculated between the measured points on a cross section and the design of the cross section. These deltas are exported as labels in the DXF file. With the previous Leica Captivate version, these labels were not aligned correctly and therefore difficult to read. This issue is fixed with Leica Captivate v4.50.
Point node scale incorrect after switching camera view	In the Stake/Measure to Line or Road apps, in the Measure/Stakeout panels, it is possible to switch the view to overview or telescope camera view. After switching the view, the point nodes would be shown with a very small scale, meaning the icons would be drawn so large that they would cover the rest of the view. This issue is fixed in Leica Captivate v4.50.
Problems importing alignments with certain geometries	In previous Leica Captivate versions, in some rare cases, there was an issue when importing alignments. This issue would be seen when the alignment contained a clothoid, for which the angle difference between entry azimuth and end azimuth was more than 100 gon. This issue is fixed in Leica Captivate v4.50.

Scan area cannot be defined if the Total Station is set up within the scan area

With previous Leica Captivate versions, a scan area could not be defined if the Total Station was set up within that scan area. Instead a message would be shown saying that **Entered resolution exceeds the defined scan areas.**

This issue is fixed in Leica Captivate v4.50.

Working styles get corrupted when restarting the CS20 Controller

With Leica Captivate v4.10 it would sometimes happen that after turning the Controller off and on again, all setting contained in the active working style where lost and the working style was corrupted.

This issue is fixed in Leica Captivate v4.50.

Transferring all Objects would not work when many jobs where stored on the instrument

In the Transfer user objects panel, an option is available to transfer all objects. When starting this transfer, the software first calculates the storage space needed for the objects to be transferred, to be sure that the creation of the zip file will work.

The option to transfer all objects allows to exclude the jobs from the transfer. There was a bug in the previous Leica Captivate version that would take the size of the jobs into account when calculating the needed storage space. When many jobs where stored in the device, the transfer would then not work

This issue is fixed in Leica Captivate v4.50 and the jobs are excluded from the calculation of the needed storage space.

Calculated COGO Road points not stored correctly

In previous Leica Captivate versions, when using an alignment without the vertical component, points that are created using the **COGO Road** tool were not properly stored. The coordinates were missing and therefore the points were not displayed in the map.

This issue is fixed in Leica Captivate v4.50.

Interpolated tunnel profile displayed with gaps on both sides

In the Tunnel app, it is possible to calculate an interpolated profile between two already available profiles. With the previous Leica Captivate version, the interpolated tunnel profile would be shown in the 3D viewer with gaps on both sides.

This issue is fixed in Leica Captivate v4.50.

Scaling a tunnel profile in the Tunnel app does not work

In the Tunnel app it is possible to scale any of the available tunnel profiles.

However, the previous Leica Captivate version, would always only scale the same profile, independent of which profile was selected to be scaled.

This issue is fixed in Leica Captivate v4.50.

Entered search values not used correctly for free coding

When using free coding, it is possible to use a hot key to **Select free code from list**.

When pressing the hotkey and typing the free code, a search field will be opened automatically, and a search will start. With the previous Leica Captivate version, the entered characters in the search field were sometimes not shown and used

in the correct order, resulting in wrong search results.

This issue is fixed in Leica Captivate v4.50.

3 Obtaining and loading the new software using myWorld (CS20 Field Controller and TS/MS instruments)

It is strongly recommended to use myWorld to load the new software to the CS20 Field Controller and TS/MS instruments.

The myWorld online update cannot be used to load the new software to the CS35 tablet and GS18 T GNSS rover.

Once your Controllers and Instruments have been registered in myWorld, connect the hardware to your PC, navigate to your products page in myWorld and follow the on-screen instructions. The latest software versions will be loaded as required.

To connect CS20 Field Controller and TS/MS instruments to the PC you need to first install the USB drivers. These drivers are available for download in myWorld.

4 Obtaining and loading the new software using manual loading (CS20 Field Controller and TS/MS instruments)

If you prefer not to use the myWorld online update, it is also possible to “manually” load the new software – in this case, please carefully read the notes below.

Obtaining the new software

The new software, language files and apps can be obtained from the following sources:

- the myWorld web site (it is also possible to manually download the files from the myWorld web site as well as automatically upgrading your controllers and sensors with myWorld)
- your local Leica Selling Unit or Dealer

Files which need to be obtained for upgrading a CS20 Field Controller

The following file needs to be obtained to upgrade a CS Field Controller - CS20LeicaCaptivate_v4_50.fw

This file contains all Leica Captivate and WinEC languages and apps

Files which need to be obtained for upgrading a TS/MS instrument

The following file needs to be obtained to upgrade a TS/MS instrument - TSxxMS60LeicaCaptivate_v4_50.fw

This file contains all Leica Captivate and WinEC languages and apps

How to load the Leica Captivate files to a CS20 Field Controller or TS/MS instrument

1. Insert your SD card or USB flash drive into your PC or card reader and copy the necessary file to be uploaded to the instrument to the **System** directory of the used memory device. This can be done with Windows Explorer or any other suitable PC software.
2. Insert the SD card or USB flash drive into the CS20 Field Controller or TS/MS instrument and turn on. Ensure the battery is fully charged.
3. From the main menu, choose **Settings** and then choose menu item **Tools** and then choose **Update software**. The **Update software** screen is now visible.

4. In the **File to load** list box ensure the correct file name is visible. If the file name is not visible, then check you have correctly copied the firmware file to the **System** directory of the SD card USB flash drive.
5. Press **F1(OK)** – a message will appear to remind you that the CS20 Controller or TS Total Station will turn off and on during the process. Press **F6(Yes)** to begin the loading process.
6. The loading process will take a few minutes and the CS20 Controller or TS Total Station will turn off and on several times during the process.

How to load the Leica Captivate files to a TS13 Total Station with a 4-button keyboard

1. Insert your SD card into your PC or card reader and copy the necessary file to be uploaded to the instrument to the **System** directory of the Sd card. This can be done with Windows Explorer or any other suitable PC software.
2. Insert the SD card into the TS13 Total Station
3. Ensure the battery is fully charged
4. Turn on the instrument, the firmware upgrade starts automatically.
5. Check the power LED. If it shows permanent green, the firmware upgrade is finished

5 Obtaining and loading the new software using manual loading (GS18 T GNSS sensor)

The GS18 T GNSS sensor can only be upgraded manually. Follow the instructions below.

Obtaining the new software

The new software, language files and apps can be obtained from the following sources:

- the myWorld web site (it is also possible to manually download the files from the myWorld web site as well as automatically upgrading your controllers and sensors with myWorld)
- your local Leica Selling Unit or Dealer

Files which need to be obtained for upgrading a GS18 T tablet

The following file must be downloaded to upgrade the GS18 T GNSS sensor

GSxxLeicaCaptivate_v4_50.fw

How to load the Leia Captivate files to the GS18 GNSS sensor

1. Insert the SD card into your PC or card reader and copy the firmware file to be uploaded to the instrument to the **System** directory of the card. This can be done with Windows Explorer or any other suitable PC software. (it is NOT possible to use a USB stick to upgrade your GS18 T GNSS sensor)
   Or
   Download the firmware file to the PC from which you will upgrade the GS18 T GNSS sensor
2. Insert the SD card into the GS18 T GNSS sensor. Ensure the battery is fully charged.
3. Connect the GS18 T GNSS sensor to your PC via a USB cable. Open the web interface by typing **192.168.254.2** into the browser window.
4. Go to **User – Load firmware** to start the firmware upgrade. You can now either browse to the firmware file on your PC or check the box that says the firmware file is on the SD card.
5. Start the firmware upgrade and follow the instructions in the web interface.

6 Obtaining and loading the new software using manual loading (CS35 Tablet)

The CS35 Tablet can only be upgraded manually. Follow the instructions below.

Obtaining the new software

The new software, language files and apps can be obtained from the following sources:

- the myWorld web site (it is also possible to manually download the files from the myWorld web site as well as automatically upgrading your controllers and sensors with myWorld)
- your local Leica Selling Unit or Dealer

Files which need to be obtained for upgrading a CS35 tablet

The following file must be downloaded to upgrade the CS35 tablet

LeicaCaptivate_CS35_v4_50.zip

The file contains Leica Captivate languages and apps.

How to load the Leia Captivate files to the CS35 tablet

1. On your PC unpack the files from the .zip file to a USB stick
2. Insert the USB stick into the CS35 Tablet
3. Using the File Explorer app within Windows on the CS35 tablet, browse to the USB stick. Double tap the Setup.exe file
4. Follow the instructions

Note that this procedure will need to be performed twice – once to uninstall the existing Leica Captivate software and then a second time to install the new software.

Obtaining sample data

Leica Geosystems provides sample data that can be used with the simulator or the instruments to try out new features or apps. The sample data needs to be installed using a separate installer. Before using it on a CS20 Controller or a TS Total Station, the data needs to be installed on a simulator first.

During the installation, it is possible to select for which simulators the sample data can be installed – the sample can be installed for all 4 simulators (SmartWorx Viva CS simulator, SmartWorx Viva TS simulator, Leica Captivate CS20 simulator and the Leica Captivate TS/MS simulator).

The sample data installer can be downloaded from myWorld. An installation guide is provided along with the sample data installer though the installation process is very easy to follow.

7 Summary of Leica Captivate Software Files

Listed below is a summary of the files available relating to the new Leica Captivate software. The version number for all files is v4.50.

File name	Description	File date	Build no.	Maintenance date
CS20LeicaCaptivate_v4_50.fw	CS20 Field Controller Leica Captivate software file	14.06.2019	859	01.05.2019
TSxxMS60LeicaCaptivate_ v4_50.fw	TS/MS instrument Leica Captivate software file	14.06.2019	859	01.05.2019
LeicaCaptivate_CS35_ v4_50.fw	CS35 tablet Leica Captivate software file (without sample jobs)	14.06.2019	859	01.05.2019
GSxxLeicaCaptivate_v4_50.fw	GS18 T smart antenna Leica Captivate software file	04.06.2019	849	01.05.2019

Гост применим к геодезическому оборудованию и приборам.